

REMARKS

Claims 1 to 27, 37 and 39 are now pending in the application, with claims 1, 37 and 39 being the independent claims. Reconsideration and further examination are respectfully requested.

Initially, Applicants confirm the election of the Group I claims, 1 to 27, 37 and 39. Non-elected claims 28 to 36, 38 and 40 have been canceled above.

In the Office Action, claims 1 to 7, 12 to 16, 21, 37 and 39 were rejected under 35 U.S.C. § 103(a) over U.S. Patent 6,125,355 (Bekaert); claims 8 to 11, 17, 18 and 22 to 27 were rejected under §103(a) over Bekaert in view of U.S. Patent 6,473,084 (Phillips); and claims 19 and 20 were rejected under §103(a) over Bekaert in view of U.S. Patent 6,018,722 (Ray). Withdrawal of these rejections is respectfully requested for the following reasons.

The present invention concerns systems, methods and techniques for estimating the tendency of the value of an asset to change based on a change in one or more exogenous variables. Thus, for example, the techniques of the present invention might be utilized to project current or future price sensitivities or elasticities with respect to such exogenous variables. See, e.g., page 12, lines 10-15.

Generally speaking, the technique of the present invention is best summarized with reference to independent claims 1, 37 and 39. Initially, historical data for the value of an asset is processed together with historical data values for several exogenous variables to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables (e.g., a price sensitivity or price elasticity formula), where such formula is a function of

such exogenous variables. Projected data values are obtained for the exogenous variables, and a measure of the tendency of the value of the asset to chance based on a change in at least one of the exogenous variables is estimated using the obtained formula and the input projected data values.

An example of this technique is helpful. Assume that it is desirable to know the present or future price sensitivity of a share of Microsoft common stock to each of the consumer price index (CPI), the gross national product (GNP) and the national unemployment rate. In accordance with the present invention, past values of the share price for Microsoft stock might be regressed against past data values for each of those three exogenous variables, in order to derive one or more price sensitivity formulas that describe how the price sensitivity of Microsoft common stock to each of the CPI, the GNP and the national unemployment rate vary as a function of those three exogenous variables.

Then, projected data values for the three exogenous variables are obtained. For example, as described in the patent applications incorporated by reference in the present Specification, predictions from numerous individuals may be combined in order to generate forecasted values for each of the three exogenous variables at a point in time one month in advance of the current date.

Lastly, these projected data values may be plugged into the price sensitivity formula obtained above in order to estimate the price sensitivity of a share of Microsoft common stock to each of the CPI, GNP and the national unemployment rate. The estimated price sensitivities may be deemed valid, for example, at the date that is one month in advance of the current date.

The present invention's techniques for generating estimates of price sensitivities, price elasticities or other measures of a tendency of the value of an asset to change based on changes in one or more exogenous variables is believed to be novel and non-obvious over the prior art. In particular, such a technique is believed to be clearly non-obvious over the presently applied art, for at least the following reasons.

Bekaert, the principle reference relied upon in the Office Action, primarily concerns asset pricing and is not seen to say anything at all about estimating a measure (e.g., price sensitivity or price elasticity) of the tendency of a value of an asset to change based on changes in one or more exogenous variables. As a result, Bekaert is not believed to say anything at all about even the individual features of the present invention that have been described above, much less the unique combination of such features that is recited in the present claims.

More specifically, in the Office Action it was asserted that Bekaert shows the feature of:

"processing historical data for the value of an asset and historical data values for plural exogenous variables to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables, where said formula is a function of the exogenous variables."

However, the Office Action did not identify any particular portion of Bekaert that allegedly discusses this feature of the invention. To the contrary, Applicants have reviewed Bekaert in detail and are unable to find this feature anywhere disclosed in Bekaert. In fact, as noted above, Bekaert does not appear to say anything about calculating a measure of the tendency of an asset value to change in any manner whatsoever.

The Office Action also cites Bekaert's column 1, lines 9 to 20, and column 2, lines 29 to 30, as showing the recited feature of obtaining projected data values for the exogenous variables. However, these portions of Bekaert appear only to generally discuss Bekaert's pricing module for estimating future prices for one or more assets. As discussed below, Bekaert's calculated prices do not correspond to, and are not used in the same manner as, the exogenous variables recited in the present claims.

In the Office Action, it is further asserted that:

"The input variables for the pricing module are interpreted to include historical data values and estimated prices are interpreted to include the step of estimating a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables."

While Applicants agree that the inputs to Bekaert's pricing module are historical data values for certain economic variables, it is not understood how Bekaert's asset price estimation is interpreted to include the step of generating a formula for calculating a measure of a tendency of the value of an asset to change as a result of changes in the data values for certain exogenous variables, where the formula is a function of the exogenous variables. Applicants are unable to find anything in Bekaert that would indicate that this is the case. Rather, it appears that Bekaert only generates a price estimate and says nothing at all about estimating a price sensitivity, price elasticity or any other measure of the tendency of the value of an asset to change based on changes in one or more exogenous variables.

Moreover, even if that feature of the invention were in fact disclosed by Bekaert (and Applicants do not believe that it is), Bekaert still would not have disclosed or suggested using such a formula, together with projected data values for the exogenous

variables to estimate a tendency of the value of an asset to change, as recited in the present claims. In this regard, the Office Action appears to assert that the recited step of obtaining projected data values for the exogenous variables reads on Bekaert's estimation of asset prices. However, the Office Action also asserts that the recited exogenous variables read on the economic variables that are input into Bekaert's pricing module. Accordingly, merely estimating asset prices in Bekaert's technique could not be equivalent to obtaining projected data values for Bekaert's input economic variables.

In other words, in the present invention historical data values for plural exogenous variables are used to obtain the formula, and then project the data values for the exogenous variables are used in connection with the obtained formula to estimate a measure of the tendency of the value of the subject asset to change. Bekaert, on the other hand, apparently only uses historical data values for certain economic variables in order to generate estimates of asset prices. The appears to be no subsequent step of obtaining projected values for such economic variables and using such projected data values in any manner similar to the presently recited technique.

The foregoing points appear to be acknowledged, at least to some extent, in the Office Action. Specifically, the Office Action acknowledges that Bekaert fails to teach the step of estimating a measure of the value of an asset to change based on a change in at least one exogenous variable using an obtained formula and the projected data values. However, the Office Action then goes on to assert that this feature of the invention would have been obvious in view of the known use of regression coefficients. Specifically, the Office Action argues that by making the value of the asset in Bekaert's technique the dependent variable and by making Bekaert's economic variables the

independent variables, one could estimate the effect of a change in Bekaert's input economic variables on the change in his calculated asset prices.

At the outset, it is noted that there is absolutely no motivation to modify Bekaert in any such manner. First, Bekaert does not appear to even remotely suggest the desirability of estimating price sensitivities, price elasticities or any other measure of the tendency of the value of an asset to change based on changes in other variables. Second, apparently the only mention of regression in Bekaert is at column 12, lines 62-65, which merely mentions the possibility of calculating a price-dividend ratio by a summation of polynomial terms of certain state variables using linear regression; Bekaert does not appear to say anything about regressing asset price against his input economic variables. Third, the present claims recite that the formula for calculating the a measure of the tendency of the value of an asset to change as a result of changes in the data values for exogenous variables is itself a function of the exogenous variables; this does not appear to be disclosed or suggested anywhere in Bekaert. Finally, even if Bekaert disclosed such a regression (and it apparently does not), there still would have been no motivation to obtain projected data values for the exogenous variables and to use such projected data values in connection with the recited formula in order to estimate a measure of the tendency of the value of an asset to change. In short, the teachings of Bekaert would have to be substantially supplemented in order to achieve the present invention, and the only motivation to do so would have to be based on Applicants' own disclosure, which of course is impermissible hindsight.

As set forth above, many of the features of independent claims 1, 37 and 39 are neither disclosed nor suggested by Bekaert. Accordingly, such claims, together with their dependent claims, are believed to be allowable over the applied art.

In addition, claims 8 to 11, 17, 18 and 22 to 27 have been rejected based upon Phillips. However, Phillips has the same inventors as the present application and was not published or issued more than one year prior to the filing date of the present application. Accordingly, Phillips is not believed to be valid prior art against the present application. For this additional reason, claims 8 to 11, 17, 18 and 22 to 27 are believed to be allowable over the applied art.

In addition to the foregoing remarks, each dependent claim in the application recites at least one additional feature that is not believed to be disclosed or suggested by the applied art. Accordingly, the individual reconsideration of each on its own merits, particularly in view of the foregoing remarks, is respectfully requested.

Based on the foregoing remarks, the entire application is believed to be in condition for allowance, and an indication to that effect is respectfully requested.

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Respectfully submitted,

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